UNITED STATES PATENT AND TRADEMARK OFFICE

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10/529,334	03/24/2005	Werner Lindemann	2002P12810WOUS	8888

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 March 2005</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>14-31</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>14-31</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>24 March 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>03/24/2005 and 07/05/2005</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   **Claims 1-13** are cancelled.

2.   **Claims 14-31** have been examined on merits and are pending in this application.

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 03/24/2005, and 07/05/2005 are being considered by the examiner.

Priority

4.   Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   **Claims 14-31,** rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 7353280 to Chiles; David Clyde et al., (hereinafter "Chiles").

As to Claims 14, and 28, Chiles teaches, *method for transparently exchanging data packets with a packet-oriented network via which a number of network elements*

and a network node device are connected, the network elements having (as stated in

col. 3, lines 39-42, col. 5, lines 1-10, Referring to FIG. 1, a home networking system 100

typically includes multiple home-networked client devices 105 *(network elements)*

connected through a network 110 to each other and to a home gateway device 115

(network node device). The general-purpose computer 240 typically will include a

communication device 254 for sending and receiving data. One example of the

communication device 254 is a modem. Other examples include a transceiver, a set-top

box, a communication card, an xDSL modem (e.g., ADSL, CDSL, DSL Lite, HDSL,

IDSL, RADSL, SDSL, UDSL, and VDSL), a cable modem, a satellite modem, a satellite

dish, and an antenna, or another network adapter capable of transmitting and receiving

data over a network through a wired or wireless data pathway)

unique addresses only within the packet-oriented network (as stated in col. 3,

lines 52-55, The home networking system 100 enables the host system 130 to assign

unique identifiers to each of the client devices 105 through the home gateway device

115),

the packet-oriented network connected to an external device by the network

node device, and (as stated in col. 8, lines 62-67, client devices 505 communicate

through the network 510 with the home gateway device 515 using Point-to-Point

Protocol over Ethernet (PPPoE). The home gateway device 515 communicates with the

host system 530 through the communication device 520 over communication links 525)

the unique address of a network element converted into an address valid for the

external device by the network node device, the method comprising (as stated in col. 9,

lines 1-7, For communications between the client devices 505 and the host system 530, the home gateway device 515 strips off the "oE" header from the PPPoE traffic used by the client devices 505, encapsulates the PPP traffic in Layer Two Tunneling Protocol (L2TP), then encapsulates the L2TP traffic in User Datagram Protocol (UDP), and passes on the encapsulated PPP communications to the host system 530):

setting up a connection between a first network element and the external device (as stated in col. 9, lines 16-30, Referring to FIG. 6, in one implementation, the client device 605 may include one or more hardware and/or software modules, to facilitate communications with other devices (e.g., the home gateway device 515 and the host system 530 through the home gateway device 515 from FIG. 5);

and verifying message header entries of data packets exchanged between the external device and the first network element (as stated in col. 9, lines 47-60, The real-time OS 614 may manage real-time interprocess communications between various protocols and verifies the header to enable the home gateway device to identify the particular client device 605 and may include address information learned during the PPPoE discovery stage, and may append the "oE" header to the PPP encapsulated traffic),

wherein if a message header entry characterizing an expanded packet-oriented protocol is detected, a temporarily transparent connection is established between the first network element and the external device, and (as stated in col. 10, lines 16-21, Referring to FIG. 7, in one implementation, the home gateway device 715 may include a PPPoE access concentrator 717, an L2TP access concentrator 719, and a dialer

module 721. The home gateway device 715 uses L2TP to tunnel the PPP traffic from each client PPPoE session to the host system)

wherein the unique address of the first network element is transferred to the external device without being converted by the network node device (as stated in col. 10, lines 31-34, lines 46-49, The dialer module 721 may be configured with a unique identifier (e.g., a login name combined with a password) that enables the host system to identify the home gateway device 715. Enabling each client device with its own PPP session permits the client device to receive its own unique identifier from the host system. The unique identifier may include, for example, an Internet address).

As to Claim 15, *Chiles teaches, method according to claim 14, wherein the address of the first network element is assigned by the external device while the connection is set up between the first network element and the external device* (as stated in col. 10, lines 46-49, Enabling each client device with its own PPP session permits the client device to receive its own unique identifier from the host system. The unique identifier may include, for example, an Internet address).

As to Claims 16, and 17, *Chiles teaches, method according to claims 14, and 15, wherein a modulation/demodulation device is arranged between the external device and the network node device* (as stated in col. 10, lines 16-25, Referring to FIG. 7, in one implementation, the home gateway device 715 may include a PPPoE access concentrator 717, an L2TP access concentrator 719, and a dialer module 721. The

home gateway device 715 uses L2TP to tunnel the PPP traffic from each client PPPoE session to the host system. A single L2TP tunnel is established between the home gateway device and the host system to carry multiple PPP sessions because L2TP provides a method to multiplex multiple PPP sessions within a single tunnel (e.g., multiple L2TP sessions).

As to Claims 18, 19 and 20, Chiles teaches, method according to claims 14, 15 and 16, wherein a verification is carried out before the transparent connection for the first network element is set up, to determine whether a connection of the same type already exists for at least one other network element or for the network node device (as stated in col. 10, lines 50-67, home gateway device 815 communicates with the client devices 505, a standard ethernet driver 823 is used to exchange Ethernet frames between the home gateway device 815 and the client devices 505. The home gateway device 815 employs a standard protocol driver 823 that, in conjunction with the real-time operating system (OS) 825, allows the exchange of Ethernet traffic from the client devices 505 with the PPPoE access concentrator 817. The protocol driver 823 binds to Ethernet driver 827 to facilitate the exchange of traffic between the home gateway device 815 and the PPPoE access concentrator 817. The real-time OS 825 typically provides the interprocess communication capability between protocol driver 823 and PPPoE access concentrator 817. When the home gateway device includes more than one Ethernet driver 827, the PPPoE access concentrator 817 uses the PPPoE

discovery phase to identify which particular Ethernet driver 823 will be used to exchange traffic with a particular client device 505).

As to Claims 21, and 22, Chiles teaches, method according to claims 14, and 15, wherein a maximum number of transparent connections is defined depending on the specifications of the external device (as stated in col. 15, lines 62-67, col. 16, lines 1-3, lines 21-25, Referring to FIG. 13, in another implementation, the home networking system may be implemented using a home gateway device 1315, which includes a Dynamic Host Configuration Protocol (DHCP) module 1327 that enables the host system to recognize individual client devices (505 from FIG. 5). The home gateway device 1315 also includes an L2TP access concentrator 1319 and a TCP/IP module 1323, which facilitate communications with the host system (530 from FIG. 5. Multiple DHCP-capable client devices 505 may receive independent Internet addresses from the host system 530 using the single communication tunnel 525 between the home gateway device 1315 and the host system 530. DHCP on Host may limit the number of assigned addresses to connect the client devices).

As to Claim 23, Chiles teaches, method according to claim 21, wherein the establishment of the transparent connection of the first network element is rejected (as stated in col. 15, lines 50-53, Additionally or alternatively, the home gateway device 1215 may limit the number of simultaneous L2TP sessions it allows).

As to Claim 24, Chiles teaches, according to claim 21, wherein an existing connection to a network element is canceled and the transparent connection of a further network element is then established (as stated in col. 11, lines 1-15, The L2TP access concentrator module 819 within the home gateway device 815 uses UDP over IP to exchange L2TP traffic with the host system (e.g., 530 from FIG. 5) using the standard TCP/IP module 829. When connectivity needs to be established with the host system 530, the dialer module 821 establishes connectivity to the host system 530 prior to the exchange of L2TP traffic between the L2TP access concentrator module 819 and the host system 530. Additionally, the dialer module 821 may calculate the host system 530 address, allowing the home gateway device 815 the potential to add a static route to the host system 530 in the home gateway device 815 routing table. This may prevent a new default route from interfering with the tunnel traffic between the home gateway device 815 and the host system 530).

As to Claim 25, Chiles teaches, method according to claim 14, wherein an existing transparent connection is terminated as soon as a connection release request is detected (as stated in col. 14, lines 50-53, In one implementation, the home gateway device 1115 may assign the client devices local addresses to identify and facilitate individual communications between the home gateway device 1115 and the client devices. The home gateway device may include a Dynamic Host Configuration Protocol (DHCP) module 1127, which may assign the local addresses (e.g., local IP addresses) to the client devices. The client devices typically include a DHCP client module (e.g.,

Windows.TM. DHCP), which may seek a local address from the home gateway device 1115 (e.g., at startup or at some other time). The DHCP module 1127 also may assign the home gateway device 1115 as the default route for each client device. DHCP module may request connection release from DHCP clients at this point connection is terminated).

As to Claim 26, Chiles teaches, *method according to claim 25, wherein the connection release request is triggered when a predefined time period, during which no data packets have been exchanged according to the expanded packet-oriented protocol, has been exceeded* (as stated in col. 15, lines 50-53, (as stated in col. 14, lines 50-53, In one implementation, the home gateway device 1115 may assign the client devices local addresses to identify and facilitate individual communications between the home gateway device 1115 and the client devices. The home gateway device may include a Dynamic Host Configuration Protocol (DHCP) module 1127, which may assign the local addresses (e.g., local IP addresses) to the client devices. The client devices typically include a DHCP client module (e.g., Windows.TM. DHCP), which may seek a local address from the home gateway device 1115 (e.g., at startup or at some other time). The DHCP module 1127 also may assign the home gateway device 1115 as the default route for each client device. DHCP module assigns addresses to clients for predetermined time and may request connection release from DHCP clients at this point connection is terminated).

As to Claim 27, Chiles teaches, method according to claim 14, wherein the communication of the network elements with one another and/or with the network node device is alternatively effected either according to the Internet protocol or according to the PPPoE communication protocol (as stated in col. 9, lines 47-67, The real-time OS 614 may manage real-time interprocess communications between various protocols (e.g., between PPPoE and L2TP and between user and Kernel mode modules), including buffer management and task scheduling. The PPPoE protocol module 613 may add a header (e.g., an Ethernet header and a PPPoE header) to the traffic (e.g., TCP/IP traffic encapsulated in PPP) to enable the home gateway device (e.g., 515 from FIG. 5) to identify the particular client device 605 from which the traffic is originating. Thus, the traffic may be considered PPPoE. More specifically, in one example, the header may include address information learned during the PPPoE discovery stage, which is discussed in more detail below, and may append the "oE" header to the PPP encapsulated traffic. The real-time OS 614 typically calls the protocol interface module 616, which is typically bound to a Network Interface Card (NIC) (e.g., 256 from FIG. 2) and allows for the exchange of traffic between the NIC and the PPPoE protocol module 613. The traffic then is typically communicated to the home gateway device using the NIC, the standard Ethernet driver module 618, and the Ethernet adapter 620).

As to Claim 29, Chiles teaches, network node element according to claim 28, wherein the network node element is configured as a router (as stated in col. 14, lines

32-34, The DHCP module 1127 also may assign the home gateway device 1115 as the default route for each client device).

As to Claims 30, and 31, Chiles teaches, network node element according to claims 28, and 29, wherein the monitoring unit controls at least one bridging device (as stated in col. 14, lines 57-59, col. 10, lines 16-31, The home gateway device 1215 typically examines the traffic from the client devices 1205 and monitors for traffic from a new source. Referring to FIG. 7, in one implementation, the home gateway device 715 may include a PPPoE access concentrator 717, an L2TP access concentrator 719, and a dialer module 721. The home gateway device 715 uses L2TP to tunnel the PPP traffic from each client PPPoE session to the host system. A single L2TP tunnel is established between the home gateway device and the host system to carry multiple PPP sessions because L2TP provides a method to multiplex multiple PPP sessions within a single tunnel (e.g., multiple L2TP sessions). Thus, in this implementation, a first protocol is used between the client devices and the home gateway device 715, and a second protocol is used between the home gateway device 715 and the host system to enable individual communication sessions between the client devices and the host system. In particular, the first protocol includes PPPoE and the second protocol includes L2TP).

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 7379475 to Minami; John Shigeto et al., US Patent No. 7107360 to Phadnis; Amit S. et al., and US Patent No. 6381646 to Zhang; Shujin et al., are cited for reference purpose only.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muktesh G. Gupta whose telephone number is 571-270-5011. The examiner can normally be reached on Monday-Friday, 8:00 a.m. -5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peling A Shaw/
Examiner, Art Unit 2144

MG